# Denbigh Experimental Forest and the Proposed Souris National Forest in McHenry County

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Involvement in forestry in McHenry County by the USDA-Forest Service began about 1930 with a preliminary report by C. G. Bates, Senior Silviculturist of the Lake States Forest Experiment Station. It identified the sand hill and sand flat country of McHenry County as a possible area for major tree planting experiments.

## Denbigh Experimental Forest

In 1931, Denbigh Experimental Forest, located 13 miles west of Towner, was established by the Forest Service on a 636 acre section of land.

1935 Photo of the Residence at Denbigh Experimental Forest.
(USDA-Forest Service Photo)

The Forest Service acquired 40 acres of the total 636 acres at that time, with the State of North Dakota retaining the other 596 acres. In 1971, the USDA-Forest Service acquired this acreage. However, since 1931, the entire section has been managed as one unit for experimental and other purposes. The original purposes for establishment included the following:

(1) Establish various tree species (primarily conifer) to determine which would grow well for subsequent shelterbelt plantings in the northern Great Plains

(2) Determine which seed sources of these species were most adaptable in the northern Great Plains

(3) Determine which methods for site preparation, planting, and care of seedlings would be best for shelterbelt purposes

During the 1930's, 1940's, and 1960's, over 40 tree species from numerous seed sources from New Mexico to Montana, the Lake States, Europe, and Asia, were planted on the experimental area. Some of these species included Scots and Austrian pine, Siberian larch and Russian-olive from Europe and Asia, red and jack pine from the Lake States, and ponderosa pine, Colorado blue spruce, Black Hills spruce, Rocky Mountain juniper, and Douglas-fir from the plains and western states. Currently about 60 percent of the experimental area has been planted. This area is extremely valuable because no other area like this has been established in the northern Great Plains.

The remainder of the experimental area, primarily in the northeast 1/4 and southeast 1/4, is natural prairie vegetation including several prairie grasses and small clumps of native aspen. In addition, a "natural forty" has been administratively set aside and reserved for botanical studies. The entire experimental area has been fenced since its establishment in 1931. No grazing has been allowed nor have any fires occurred since that time. Except for about 80 acres owned by BLM along the east boundary of the experimental area near the northeast corner, all adjacent ownership is private. All surrounding land is used for cattle grazing.

During the past several years, studies have been initiated with the conifer species. Research in genetics for tree improvement is being carried out cooperatively with the USDA-Agricultural Research Service and the North Dakota Forest Service. Characteristics for superior trees being studied include faster growth and increased hardiness.

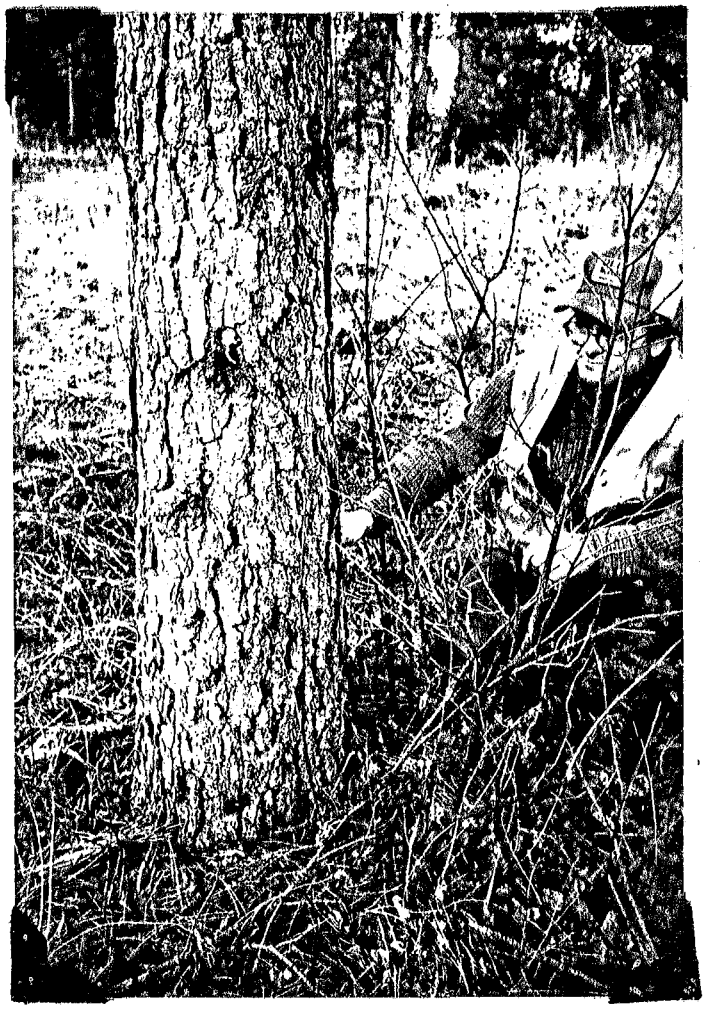
Equally as important as the past and current research studies, the experimental area provides nearly all of the conifer seed for the North Dakota Forest Service nursery located 2 miles north of Towner. The nursery, in turn, provides all of the coniferous seedlings for shelterbelt plantings in North Dakota and part of the seedlings for the neighboring states of Montana, South Dakota, and Minnesota. Each fall, the nursery personnel spend several weeks collecting seed for next year's planting. No other seed sources for production of some 1 1/4 million seedlings each year exist in North Dakota.

There are no developed recreation sites located within the experimental area. Dispersed recreation includes hunting of deer and sharp-tail grouse, hiking, berry picking, and cross-country skiing. A hiking trail for viewing the countryside has been established over several large sand dunes in the southwestern part of the area.

An arboretum containing about 30 species (primarily conifer) from Europe, Asia, and the U.S. was established during 1940-1942. It is used, along with the rest of the planted area, as an outdoor classroom for students from North Dakota State University-Bottineau Campus.

The experimental area is extremely important for wildlife. It provides a variety of food and cover for numerous wildlife species. Over the years, it has become a winter haven for nonmigratory wildlife species, drawing white-tail deer and sharp-tail grouse and other species from a considerable distance--primarily because of the protection the coniferous stands provide from severe winter storms and because of the readily available food sources. During the remainder of the year, the above species and others utilize this excellent habitat. Raptors, including several hawk and owl species, frequent the area during much of the year.

Management responsibilities are conducted jointly between the Rocky Mountain Forest and Range Experiment Station's Forestry Sciences Laboratory in Lincoln, Nebraska and the Northern Region's Custer National Forest. Whereas research studies are the lab's responsibility, the Custer administers land management activities including protection from fire and insects, protection from grazing including fence maintenance, road and trail maintenance and signing, noxious weed control (primarily leafy spurge), and building maintenance. (A residence, garage; and storage shed were built in 1931 and remain in relatively good condition.) In addition, oil and gas and other mineral management is administered by the Custer National Forest.



Forester Examining a Ponderosa Pine in One of the Many Plantations at Denbigh Experimental Forest in 1984.
(USDA-Forest Service Photo)

In September of 1983, the Custer National Forest entered into a contract with the North Dakota Forest Service for thinning of tree stands, slash burning, insect control, and leafy spurge control for $48,000. In May of 1984, the contract was modified to include building and trail maintenance, road and trail sign construction, renovation and installation. This modification added $3,488 to the contract cost. The contract was completed in December of 1984.

Project work completed includes 36 acres of thinning and pruning in conifer stands; red turpentine beetle spraying in 30 acres of pine stands; 240 acres of leafy spurge control; slash burning; general cleanup; building maintenance; road and trail sign construction, renovation, and installation; and one-fourth mile of trail maintenance including placement of railroad ties for erosion control. The North Dakota Forest Service work crew of eight people from the local area is employed and supervised by the nursery manager at Towner.

Proposed Souris National Forest

Economic and drought conditions by 1931 had started to worsen. During that year, key people in McHenry County and State officials petitioned the USDA-Forest Service to study the possibilities of establishing a national forest on the sandy soils of the county, similar to the national forest successfully established previously in the sand hills of Nebraska. An article in the Mouse River Farmers Press dated 10/9/31 stated in part the following:

> "In McHenry County, especially during recent years when cattle raising has been unprofitable, land values have shrunk until the really sandy tracts attract no buyers, and the county itself is burdened with thousands of acres which have reverted to it for non-payment of taxes. The state of North Dakota has also acquired considerable of this land on foreclosed mortgages, altho the state land is more largely meadow or tillable land.
>
> It is the nearness of the watertable which has led several public spirited citizens of the state, as well as state and county officials burdened with the problem of disposition of their unprofitable holdings, to believe that forest trees once established upon them would make excellent growth despite the low rainfall of the region and the occasional occurence of years like the present, when the surface sand becomes almost bone dry."

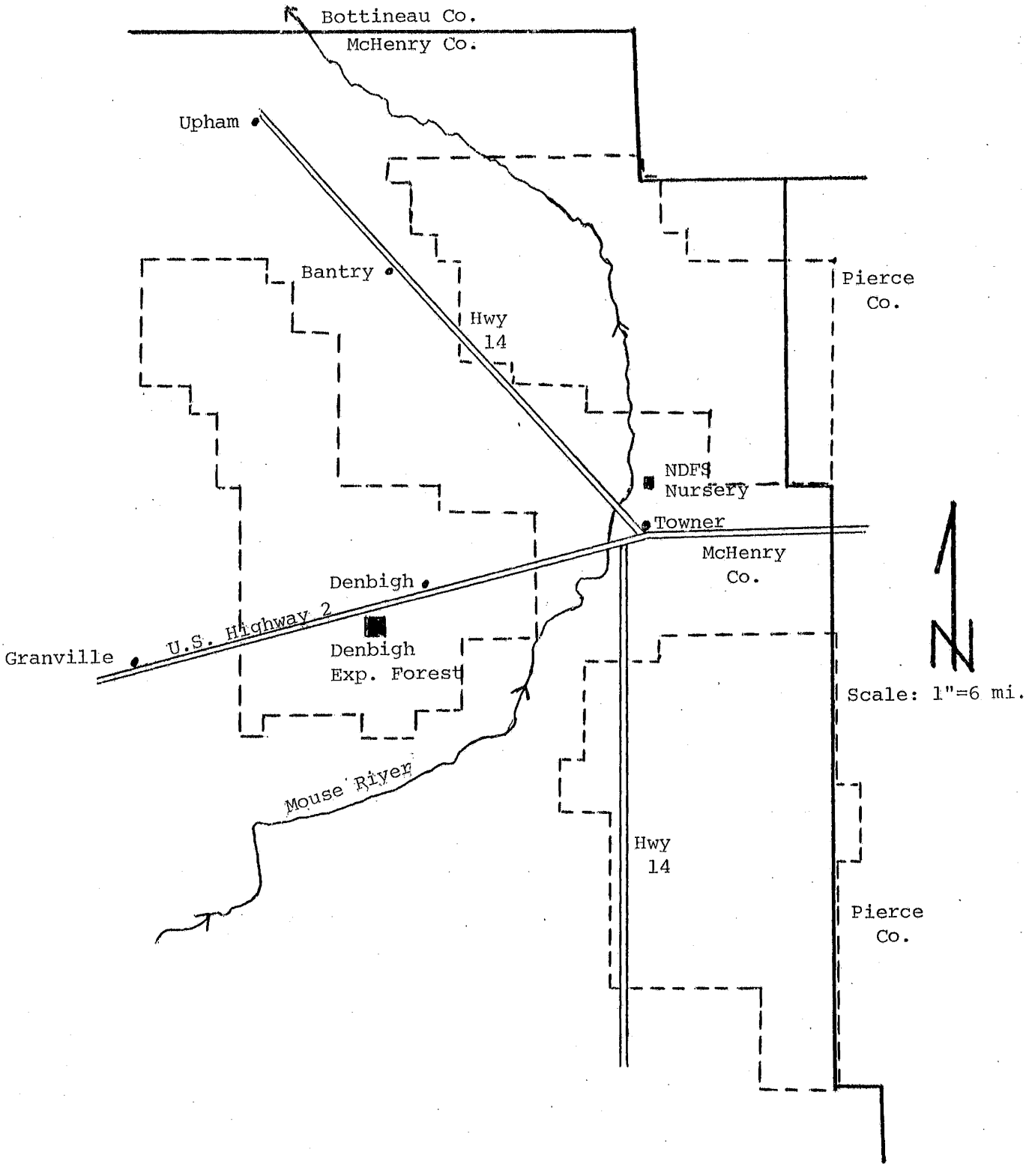
As the study continued to 1935, drought conditions continued to get worse. Much of the sandy soil areas previously cultivated were severely eroding because of the lack of vegetation and moisture, high winds, and high temperatures. Dune areas too rough to cultivate were being overgrazed by cattle and sheep.

In 1935, the Forest Service announced that the National Forest Reservation Commission had approved the purchase of Souris National Forest. The potential size of the area ranged from 200,000 to 480,000 acres in McHenry County with a small portion extending into Pierce and Bottineau Counties (See Map). The plan was to plant trees on about 1/3 of the total area and grass on the remainder. These plantings would stabilize the blowing sands and render the land useful for forestry and agricultural purposes in addition to providing recreation and wildlife habitat for big game and upland game. The national forest would remain 1/3 forested, 1/3 for haying, and 1/3 for grazing. It was thought by many people that this establishment

of the national forest would help improve the local economy by employing many people for planting and care of the trees, by providing hay for local ranchers, and by allowing grazing on some of the land. However, following 1935, Congress failed to appropriate funds for purchasing these lands during the intervening years and the plan to establish the national forest was eventually dropped.

Also in 1935, the National Forest Reservation Commission approved the purchase by the U.S. Forest Service, of 480 acres two miles north of Towner to establish a nursery for producing the tree seedlings needed for planting the national forest. This land was purchased and the nursery was established that year. It remained in operation until 1942, when it was closed down during World War II. In 1951, the North Dakota Forest Service reopened the nursery and has operated it since that time. In 1971 through a land exchange, the ND Forest Service acquired the land at the nursery from the U.S. Forest Service. It currently produces about 1 1/4 million seedlings each year.

# PROPOSED SOURIS NATIONAL FOREST




Legend

------ Proposed National Forest Boundary

——— County Boundaries